

XII. *An attempt to point out the differential characters of some closely-allied species of Chrysomela, principally those contained in Suffrian's 11th group; also descriptions of some hitherto uncharacterized forms belonging to the same and other genera of the family.* By JOSEPH S. BALY, F.L.S.

[Read June 4th, 1879.]

(Pl. II.)

My principal object in bringing the present paper under the notice of the Society is to point out that *Chrysomela speciosa* and its closely-allied forms, belonging to the 11th group of Suffrian's monograph, possess good structural characters, by the aid of which they may be readily separated into their respective species. Hitherto, owing to their great similarity in form, sculpture, pattern and coloration,* these insects have been a constant source of perplexity to the student, and are mixed up in our collections in apparently hopeless confusion.

Since the promulgation of the Darwinian theory, the ideas of most naturalists on the limits of a species have been greatly enlarged, whilst their views as to its proper definition have been much modified; the conviction is now almost universal, that in the diagnosis of an animal, structural differences (as far as practicable) should be insisted upon, to the comparative exclusion, beyond certain limits, of the minor points of pattern, colour and similar characters, formerly so constantly employed for the purpose.

Most animals, placed under favourable conditions of life, viz., abundant food, genial climacteric influences, the absence of enemies and the like, increase rapidly, and, unchecked by natural obstacles, spread quickly over a very wide area. Should these conditions be highly favourable

* In the group before us the individuals of a species not only vary in these respects amongst themselves, but the same colours and pattern are repeated in several closely-allied forms, so that, without strict attention to structural differences, it is quite impossible to separate them.

and in excess of the requirements of the species, the superabundant vital force thus acquired would seem to expend itself in throwing off innumerable varieties, some so dissimilar in habit to the parent form as to be considered by many naturalists specifically distinct.

Slight alterations in the conditions; differences of climate, lessened food supply, the inroads of enemies, and other causes too numerous to mention, will check this exuberance of life, and some of the weaker varieties (unfitted to stand against these changes) will die out, whilst those which remain, in accommodating themselves to their new surroundings, will undergo further modification and eventually attain specific rank.

Not unfrequently the individuals adapt themselves so entirely to their new state of life that the requirements and means of existence are equally balanced; and the animals will then continue unchanged for an indefinite length of time, or so long as this balance remains undisturbed.

Lastly, the environment of a species is often so adverse to its wellbeing that it gradually succumbs, and, after a more or less prolonged struggle for existence, dwindles away, and finally dies out.

Every intermediate stage will, as a matter of course, be found between these extremes; but, assuming the doctrine of development to be true, it must be obvious that every animal must live under one or more of the above-named conditions, and it must be equally obvious that the immediate surroundings of an animal must determine its permanence as a species, its development into fresh forms, or its final extinction; the vital energy of an animal being governed by the favourable or unfavourable conditions, or, in other words, the local peculiarities of the spot in which it lives.

It must happen that a widely-spread species, stretched over an extended district, will be exposed to varying influences, some favourable, others adverse to its necessities or requirements of life, and it may be readily conceived that each individual, in accommodating itself to its immediate locality, will undergo various modifications, and depart more or less from the parent form. At one point such departure will be but slight, and not extend beyond the limits of a local variety or race; at another the divergence will be greater, and culminate in the development of structural characters, of sufficient importance

to separate the individual from the original type, and develop it into a distinct species; in a third, from adverse causes, the species may be on the eve of total extinction.

I have omitted all mention of sexual selection, which doubtless plays an important part in the gradual modification of animals, more especially in the development of sexual differences; but I have said enough to show that, in the minds of all who hold the above views, the conception of a species and of its limits must stand on a broader basis than the one entertained by the older naturalists.

Individuals will occasionally be met with (as, for example, in *Ch. sanguinolenta* and allied forms), so closely on the border-line between variety and species, and presenting such slight differences of structure, that they may be placed, with almost equal justice, under either head; with these exceptions, the absence of structural characters will reduce an individual, differing only in minor particulars, to the subordinate rank of a variety (local or otherwise) of a previously-known specific group.

In the vertebratæ and higher animals good characters are often found both in the skeleton and in the soft internal organs; in the invertebratæ and lower forms of life, the softer parts are generally unavailable for use, and characters must be sought in the outer surface of the body.

In insects the part of the body where these characters reside vary in almost every family. In the *Chrysomelidæ* they are found in the tarsi, the palpi, the margination and shape of the sides of the thorax, in the arrangement of the punctuation of the elytra, in the apical segment of the abdomen, and more rarely in the antennæ; lastly, the telum or ♂ organ* (in many groups quite useless as a

* The *telum* or ♂ organ may be separated into the following parts:—(1) the *body*, a hollow corneous tube, variable in length, and more or less curved longitudinally, the convexity of the curve being upwards; its lower surface is prolonged anteriorly into (2) the *apex*, the variations in form of which afford valuable diagnostic characters; its upper or convex surface is shorter than the lower and terminates anteriorly in (3) the *valve*, a corneous or semi-corneous plate, continuous at its base with the surface of the body, but free at the sides and apex; when sufficiently rigid to retain its shape after death, it is frequently of use in separating closely-allied species; lastly (4), the *duct*, a slender, apparently tubular body, lying in the cavity of the telum; this last is often short and entirely hidden from view, but frequently extends beyond the anterior margin of the valve or even beyond the apex of the telum itself; it is sometimes slender and filiform, at other times more robust and rigid; its apex is very variable in form.

In medium sized or large Coleoptera the telum can always be extracted without the slightest injury to the specimen; the mode I adopt is as

means of diagnosis) varies greatly in form in the present family, and often affords most important aid in the separation of allied species. I will only add, that I have included in this paper the descriptions of some *Chrysomelidæ* contained in my cabinet, apparently new to science.

SYNOPTICAL TABLE of the Species belonging to Suffrian's 11th group, described or mentioned in this paper.

I. Apical joint of maxillary palpus broadly truncate.

A. Sublateral groove of thorax interrupted in its middle third.

- a. Elytra oblong or oblong-ovate; sides parallel in the ♂, usually dilated posteriorly in the ♀.

MALES.

1. Apex of anal segment of abdomen trilobate, the lobes obtuse, equal in length *speciosa.*
2. Apex of anal segment concave-emarginate, bisinuate, the intermediate lobe shorter than the angles of the emargination,—
 - * Apical joint of maxillary palpus broader than the penultimate .. *nivalis.*
 - ** Apical joint of maxillary palpus narrower than the penultimate.. *gloriosa.*
3. Apex of anal segment bisinuate, the intermediate lobe produced, angulate.. *bifrons.*

FEMALES.

1. Apex of anal segment of abdomen bisinuate, trilobate, the intermediate lobe scarcely longer than the lateral ones, obtuse *speciosa.*
 2. Apex of anal segment bisinuate, trilobate, the lateral lobes very short, the medial one produced, subangulate .. *gloriosa.*
 3. Apex of anal segment obtusely rounded, obsoletely bisinuate *nivalis.*
 4. Apex of anal segment angulate .. *bifrons.*
- b. Elytra regularly oval, not dilated behind the middle in either sex *sulcata.*
- B. Sublateral groove of thorax entire *intricata.*

follows:—After the removal of the abdomen from the body, which I readily effect by the insertion of a needle into the hinder acetabula (between the coxæ and the basal margin of the abdomen), I moisten its under surface with a little water or spirit, and extract the telum with a fine pair of forceps; having done so, I mount the latter on a strip of card, and, with the aid of gum, refix the former in its original position.

- II. Apical joint of maxillary palpus obtusely truncate or obtuse.
- A. Sublateral groove of thorax obsolete, or nearly so *alecyonea*.
- B. Sublateral groove of thorax distinct, entire.
- * Body narrowly elongate, sides of elytra parallel, or nearly so, in either sex *cacaliæ*.
- ** Body elongate, dilated posteriorly in both sexes *elongata*.
- *** Body elongate, oblong-elongate or oblong-ovate; sides of elytra subparallel or parallel in the ♂, usually dilated posteriorly in the ♀.
- o. Body exceeding 4 lines in length *tristis*.
- oo. Body not exceeding 4 lines in length.

MALES.

- † Anal segment of abdomen truncate, apex of telum hastate *elegans*.
- †† Anal segment truncate, obsolete bispinnate; apex of telum angulate, its extreme apex produced, subcuneiform. *speciosissima*.

FEMALES.

- † Elytra ovate, distinctly dilated posteriorly *speciosissima*.
- †† Elytra broadly oblong-ovate, scarcely dilated behind the middle *elegans*.

Chrysomela speciosa, Fabr.

Syst. Ent. i. p. 101; Suffr. Mon. p. 172.

Elongata ♂; minus elongata et postice paullo ampliata ♀; thorace evidenter, minus crebre punctato, lateribus intra marginem longitudinaliter excavatis, sulco rude et fortiter foveolato-punctato, basi magis fortiter excavato, medio interrupto; elytris sat crebre aciculato-punctatis, interspatiis rugulosis.

Mas.—Tarsorum anticorum quatuor articulo basali dilatato, semi-ovato, illo tarsi postici longiori, semi-elongato-ovato; abdominis segmento apice trilobato, lobis æquilongis; *telo* elongato, curvato, lateribus apicem versus paullo attenuatis, apice dilatato, subspathulato, apice ipso abrupte deflexo; valvulâ rigidâ, recurvatâ.

Fæm.—Abdominis segmento anali apice obtuse angulato, utrinque leviter sinuato.

A. Læte metallico-viridis, elytris vittis duabus, basi et apice confluentibus, unâ subsuturali, unâ submarginali, rufo-aureis aut aureis.

- B. Metallico-viridis, cæruleo tineta, elytrorum vittis aeneis.
- C. Metallico-viridis, elytrorum vittis nigro-cyaneis.
Ch. phalerata, Germ. Faun. Eur. 16, tab. 13.
- D. Cupreo-aut aureo-enea, viridi tineta, elytris rufo-aureis, lineâ angustâ suturali, limbo inflexo vittâque discoidali aeneis.
Ch. superba, Oliv. Encycl. Meth. v. p. 705.
- E. Metallico-viridis, lineâ angustâ suturali, limbo inflexo vittâque discoidali metallico-cæruleis aut nigro-cæruleis.
- F. Cæruleo-nigra aut nigra.
Ch. venusta, a, b, Suffr. p. 175.
Ch. nigrina, a, b, Suffr. p. 176.
- G. Viridi-cyanea aut cyanea, elytrorum signaturis obsoletis.
Ch. punctatissima, Suffr. p. 174.
- Long. $3\frac{1}{2}$ —6 lin.
Hab.—European Alps.

Thorax nearly twice as broad as long; sides nearly straight and parallel from the base to beyond the middle, thence rounded and converging to the apex; disk distinctly punctured, the lateral margin bounded within by a broad, coarsely and irregularly-punctured longitudinal space, the hinder third of which is deeply excavated; the middle third is on a level with the disk, and its anterior third, which is dilated inwardly on the disk, only slightly depressed. Elytra broader than the thorax, sub-elongate and nearly parallel in the ♂; more oblong and dilated posteriorly in the ♀; convex, strongly and rather closely aciculate-punctate; interspaces granulose, irregularly wrinkled, more strongly so on the outer disk and behind the middle.

Ch. speciosa is more widely spread and is more variable in size, colour and degree of punctuation than any other species in the sub-group to which it belongs.

It agrees with *gloriosa*, *bifrons*, *nivalis* and *sulcata*, in the broadly truncate apical joint of the maxillary palpus, and in having the lateral sulcation of the thorax more or less broadly interrupted in its middle third. Good differential characters exist some of which will be found in the table given above, and others will be pointed out in the descriptions of each species.

The apical joint of the maxillary palpus is equal in width, or nearly so, to that of the penultimate. It differs in this respect from *bifrons* and *nivalis*, in both which insects it is broader than the penultimate. The same character separates it from *gloriosa*, in which species the terminal joint is narrower than the preceding one. In the ♂ sex of *speciosa* and *gloriosa*, the basal joint of the two anterior pairs of tarsi agrees in length and dilatation; in both it is longer than in *nivalis*. The trilobate apex of the anal segment of the abdomen in the ♂ is very similar to that of *sulcata*, but the great difference in general form in the two species will prevent them from being confounded with each other, even when the longitudinal grooves on the elytra in the latter insect are wanting. The form of the apex of the segment in the ♀ approaches very closely to that of the *gloriosa*, but in the present insect the extreme apex or space between the sinuosities is very slightly produced and very obtuse.

Chrysomela nivalis, Suffr.

Lin. Ent. p. 16, var. γ - δ ; *ignita* Kuster. Kaf. 13, n. 90?

Elongata, fere parallela ♂; minus elongata, postice ampliata ♀, rufo-emprea, subtus æneo tincta; thorace subcrebre punctato, lateribus intra marginem profundius punctatis, basi excavatis, apice leviter depressis; elytris thorace latoribus, parallelis ♂, postice ampliatis ♀, convexis; subopacis, minus fortiter punctatis, punctis aciculatis, interspatiis granulosis, leviter rugulosis.

Mas.—Palporum maxillarium articulo ultimo quam penultimo latiori, apice late truncato. *Tarsorum* omnium articulo basali dilatato, breviter semi-ovato, illo tarsi postici paullo longiori; *abdominis* segmento ultimo apice concavo-emarginato, fundo breviter lobato; *telo* modice elongato, curvato, apice semi-ovali.

Fæm.—*Abdominis* segmento ultimo obtuse rotundato, utrinque obsolete sinuato.

Long. 4—5 lin.

Hab.—Swiss Alps; Pyrenees.

Thorax nearly twice as broad as long; sides parallel at the base, rounded and converging from the middle to the apex; disk more closely punctured than in *Ch. speciosa*, the sides excavated in a similar manner, but more sparingly impressed with coarse punctures than in that species, the puncturing being finer and less separable from that of the

disk. Elytra broader than the thorax, the sides parallel in the ♂, dilated posteriorly in the ♀, convex, subnitidous or more rarely nitidous, finely but distinctly punctured, the punctures aciculate; interspaces granulose, finely and irregularly wrinkled. Thorax more closely punctured than in any of the other species of the subsection; the elytra more finely punctured, their general surface being at the same time less nitidous and more finely wrinkled.

All the specimens I have seen of this insect (some twenty in number) are extremely uniform in coloration; they are all a coppery-red, more or less tinged with æneous beneath; they belong to Suffrian's var. γ and δ . I have never met with any of the other varieties given by Suffrian, and cannot help suspecting that they belong to some other species.

The short basal joint of the four anterior tarsi, together with the broader apical joint of the maxillary palpus, will separate the ♂ of *nivalis* from the same sex of *gloriosa*, the only one with which it might be confounded; the ♀ may be at once known by the obtusely rounded and obsoletely bisinuate apical segment of the abdomen.

Chrysomela gloriosa, Fabr.

Ent. Syst. i. p. 324; Syst. El. i. p. 440; Suffr. p. 165.

Elongata, postice vix ampliata, convexa; thorace utrinque intra marginem incrassatum profunde et irregulariter foveolato-punctato, basi profunde, apice minus evidenter excavato, disco suberebre punctato, baseos medio vittâ brevi impresso (hâc vittâ interdum obsoletâ); elytris sat fortiter punctatis, punctis aciculatis, interspatiis rugulosis.

Mas.—*Abdominis* apice late concavo-emarginato, fundo leviter bisinuato, medio breviter lobato, lobo obtuso; *telo* robusto, sat elongato, regulariter curvato, apice linguiformi.

Fœm.—*Abdominis* apice utrinque concavo-emarginato, apice ipso distincte producto, obtuse angulato.

- A. Viridi-metallica, thorace cyaneo tincto; elytrorum lineâ suturali vittâque discoidali utrinque abbreviatâ cyaneis.
- B. Cyanea, elytrorum lineâ suturali vittâque discoidali nigro-cæruleis aut cæruleis.
- C. Cyanea, elytrorum signaturis obsoletis.

Long. 4—5 lin.

Hab.—Swiss Alps.

Thorax similar in shape and punctuation to *Ch. speciosa*; middle disk sometimes impressed on the basal margin with a short longitudinal fovea (this fovea is ill-defined and often entirely obsolete). Elytra punctured as in the preceding species.

The ♂ may be known from the same sex of all the other species of the subsection (*nivalis* excepted) by the form of the anal segment; from the latter insect the narrow terminal joint of the maxillary palpæ, together with the longer basal joint of the four anterior tarsi, will separate it; the apex of the anal segment in the ♀ is nearest in shape to *speciosa*, but the medial lobe is produced and more distinctly angulate.

Chrysomela bifrons, Fabr.

Elongata ♂, oblongo-elongata, postice paullo ampliata ♀; thorace tenuiter sed distincte punctato, lateribus intra marginem rude foveolato-punctatis, basi et apice excavatis; elytris sat crebre, subfortiter punctatis, punctis aciculatis; interspatiis nitidis, leviter rugulosis; palporum maxillarum articulo ultimo quam penultimo latiori, late truncate.

Mas.—*Tarsorum* anticorum articulo basali semiovato; illis tarsorum posteriorum quatuor longioribus, semi-elongato-ovatis; *abdominis* segmento ultimo bisinuato, lobo intermedio paullo producto, angulato; *telo* sat elongato, curvato, apice non deflexo, lateribus parallelis, ad apicem oblique convergentibus, apice antrorsum prolongato, anguste cuneiformi, apice ipso obtuso.

Fæm.—*Abdominis* segmento ultimo subangulato, apice extremo obtuso.

A. Supra læte cuprea, subtus cyanea.

Ch. bifrons, Fabr. Ent. Syst. i. p. 314; Syst.

El. i. p. 432.

B. Viridi-ænea, subtus viridi-cyanea, thoracis basi elytrorumque suturâ vittâque discoidali cyaneis.

Ch. vittigera, Suffr. Mon. p. 166.

C. Viridi-metallica, æneo tineta.

Ch. ænescens, Suffr. (?) l. c. p. 161.

D. Metallico-purpurea.

Ch. luctuosa, var. (?)

Long. 4—5½ lines.

Hab.—Italian Alps, Pyrenees, A.; Swiss Alps, B., C. and D.

Thorax twice as broad as long; sides parallel at the base; thence rounded and converging to the apex; disk finely punctured, sides more deeply excavated at the base than in *Ch. speciosa*, coarsely punctured. Elytra broader than the thorax, parallel in the ♂, slightly dilated posteriorly in the ♀, rather strongly aciculate-punctate; interspaces nitidous, less strongly wrinkled than in allied species, basal joint of the anterior pair of tarsi in the ♂ semiovate, scarcely longer than broad, gradually increasing in length in the two hinder pairs, in the third twice as long as broad.

All the specimens agreeing in coloration with Suffrian's description (which is probably that of a local form) came from Italy; the other varieties of colour were brought from the Swiss Alps. I have received the species from Mäerkel's collection under the names of *vittigera* and *pretiosa*, Suffr., and *luctuosa*, Duft.

In punctuation this insect more closely resembles *Ch. speciosa* than any of the other species of the subsection; both sexes may be at once separated by the peculiar form of the apex of the anal segment of the abdomen. In the larger females, the elytra are more parallel and less dilated posteriorly than in fully-developed specimens of *speciosa*, but this character in a long series of individuals would probably be found inconstant; from *nivalis*, with which it agrees in the broader apical joint of the maxillary palpus, the different relative length of the basal joint of the tarsi in the three pairs of legs will at once distinguish it.

Chrysomela sulcata, Gebl.

Mem. Mosc. vi. 1823, p. 123.

Anguste elongato-ovata, metallico-cærulea aut viridiana, thorace sat fortiter, suberebre punctato, lateribus incrassatis, sulco longitudinali intus marginatis, sulco medio interrupto, basi magis profunde excavato, rude foveolato-punctato; elytris ovatis, suberebre aciculato-punctatis, interspatiis rugulosis; utrisque sulcis latis longitudinalibus tribus, leviter excavatis, instructis.

Var. A. Elytrorum sulcis obsoletis.

Ch. basilea, Gebl. Mem. Mosc. vi. 1823, p. 122.

„ Germ. Ins. Spec. Nov. 1823, p. 594.

Mas.—*Tarsorum* anticorum quatuor articulo basali

dilatato, breviter semi-ovato, illo tarsi postici paullo longiori; *palporum* maxillarium articulo ultimo late truncato, quam penultimo latiori; *abdominis* segmento anali trilobato, lobis obtusis, fere æquilongis; *telo* elongato, curvato, apice linguiformi, apice ipso paullo deflexo; *ducto* quam *telo* breviori, dorso canaliculato, apice bifido.

Fœm.—*Palporum* maxillarium articulo ultimo ad penultimum æquilato aut vix latiori; *abdominis* segmento anali apice angulato-rotundato, integro.

Long. 4—5 lin.

Hab.—Eastern Siberia, Lake Baical; Mongolia.

Thorax nearly twice as broad as long; sides thickened, straight and nearly parallel from their base to beyond the middle, thence rounded and converging to the apex, the hinder angles acute, the anterior ones moderately produced, obtuse; disk rather strongly and somewhat closely punctured, a very narrow longitudinal line on the middle disk (sometimes obsolete) free from punctures; the longitudinal space bounding the thickened lateral margin deeply excavated from its base nearly to its middle, slightly excavated in front, less broadly interrupted in the middle than in *speciosa*; its whole surface much more coarsely and irregularly punctured than in its congeners. Elytra regularly oval, not dilated behind the middle, convex, aciculate-punctate; interspaces irregularly but less coarsely wrinkled than in *speciosa* and its allies; each elytron with three broad, shallow, ill-defined longitudinal sulcations, which extend nearly the whole length of the disk; in some specimens these grooves are much less distinctly marked, in others (*Ch. busilea*, Gebl.) they are entirely obsolete.

When these sulcations are present, they alone will separate the insect from its allies; when absent, the narrow elongate-ovate form of the body, and the regularly ovate elytra, not dilated posteriorly in either sex, will at once distinguish the species from all others of the same sub-group.

The apex of the anal segment of the abdomen in the ♂ is similar in shape to that of *speciosa*; in the ♀ it closely resembles *bifrons*, but is rather shorter and less distinctly angulate.

The two forms of the above insect stand in our cabinets under different names, given them in the same paper by

Gebler in 1823. They agree so closely in all essential characters, and the sulcations of the elytra are so variable in degree and definition, that without hesitation I have placed them under the same specific head.

The specimens of var. A. are usually rather smaller than those belonging to the typical form.

Chrysomela intricata, Germ.

Ins. Spec. Nov. 1824, p. 596; Suffr. Mon. p. 180.

Anguste oblonga ♂, oblongo-ovata postice paullo ampliata ♀, viridi-aut cæruleo-metallica; thorace transverso, rude rugoso-punctato, lateribus intra marginem longitudinaliter sulcatis; elytris subcrebre punctatis, interspatiis irregulariter rugosis.

Mas.—*Abdominis* segmento anali apice concavo-emarginato; *telo* brevi, robusto, curvato, apice obtuse angulato.

Fæm.—*Abdominis* segmento anali apice obtuse rotundato.

Long. 4—5½ lin.

Hab.—Swiss Alps; Styria.

The character given in the Synoptical Table so completely separates this species from its congeners that a detailed description is quite unnecessary.

Chrysomela alcyonea, Suffr.

Mon. p. 156.

Ch. speciosa, var. *K. alcyonea*, Kraatz. Berl. Ent. Zeit. 1859, p. 283.

Elongata, parallela ♂, thorace transverso; disco punctato, lateribus intus non aut vix excavatis, rude variolosis; elytris sat crebre aciculato-punctatis, interspatiis rugulosis; palporum maxillarium articulo ultimo ad penultimum latitudine vix æquali, breviter ovato, apice obtuso.

Mas.—*Tarsorum* articulo basali semiovato, duobus anticis fere æquilongis; tertio longiori; *abdominis* segmento anali apice concavo-emarginato; *telo* brevi, robusto, curvato, apice obtuso; *ducto* gracili, filiformi, quam *telo* longiori.

Viridi-metallica, fronte, thoracis lateribus, tibiis abdominalisque segmentis apice aureis; elytris aureis, lincâ suturali

vittâque latâ discoidali cyaneis; limbo externo viridi-æneo.

Long. $3\frac{2}{3}$ lin.

Hab.—South of France; Styria.

Thorax nearly twice as broad as long; sides straight and nearly parallel from the base to beyond the middle, thence obliquely converging and slightly rounded to the apex, the anterior angles acute, the anterior margin deeply concave-emarginate; disk distinctly punctured, the sides coarsely variolose, punctate, irregularly wrinkled. Elytra nitidous, rather strongly punctured; interspaces irregularly rugose.

This insect, considered by Dr. Kraatz and others as a small variety of *Ch. gloriosa* or *speciosa*, is nevertheless a good species. The male (the only sex known to me) is separated from *speciosa* by the much smaller size, the ovate apical joint of the maxillary palpus, by the absence (or nearly so) of the lateral excavations on the thorax, by the concave apex of the anal segment of the abdomen, and lastly, by the entirely different shape of the *telum*; in the present species this organ is very short, robust, regularly curved, obtuse at the apex, its slender and filiform duct extending considerably beyond the apex of the *telum* itself.

Chrysomela tristis, Fabr.

Elongata fere parallela ♂; magis oblonga, postice paullo ampliata ♀; thorace tenuiter sed distincte punctato, lateribus rotundatis (basi parallelis ♂) intra marginem longitudinaliter sulcatis, sulco integro, rude foveolato-punctato; elytris sat crebre aciculato-punctatis, interspatiis rugulosis; palporum maxillarium articulo ultimo ad penultimum vix æquilato, apice obtuse truncato.

Mas.—*Tarsorum* anteriorum quatuor articulis basalibus, fere æquilongis, modice dilatatis, semiovatis. Tarsi postici articulo basali longiori; *abdominis* segmento ultimo obtuse truncato, bisinuato, apice vix producto; *telo* modice elongato, curvato, apice semiovato; ducto ad teli apicem æquilongo, apice paullo dilatato.

Fœm.—*Abdominis* segmento ultimo obtuse angulato, utrinque obsolete sinuato.

A. Viridi-metallica aut viridi-ænea.

B. Viridi-ænea, elytris cupreis.

C. Olivacea, viridi tineta.

D. Cyanea aut metallico-cærulea.

E. Cæruleo-nigra aut nigra.

Ch. luctuosa, Duft. (sec Suffrian).

Long. $4\frac{1}{2}$ —5 lin.

Hab.—Swiss Alps, Dieppe, Turkey (Jelski).

Thorax nearly twice as broad as long; sides moderately rounded in the ♀, parallel behind the middle in the ♂, thickened, bounded within by a deep entire longitudinal groove, the surface of which is coarsely foveolate-punctate; disk finely but distinctly punctured. Elytra narrowly oblong in the ♂, broader and dilated posteriorly in the other sex; convex, rather closely impressed with aciculate punctures; interspaces rugulose.

All the specimens I have seen of this species—twenty-six in number—agree in having the coloration of the elytra of a uniform tint, all markings being obsolete. I have, therefore, excluded Suffrian's varieties a, b, c; a bluish-black specimen sent to me by Dr. Suffrian as *Ch. luctuosa*, Duft., belongs to the present species; another, metallic blue, from Mäerkel's collection, bearing the same name, is a variety of *Ch. bifrons*.

In addition to the structural characters, the larger more robust form in both sexes, together with the more oval shape of the elytra in the ♀ sex, will separate this insect from its allies in the same subsection.

Chrysomela cacaliae, Schrank.

Suffr. Mon. p. 150.

Ch. tussilaginis, Suffr.?

Anguste elongata, thorace disco sat remote, irregulariter punctato, ad latera rude rugoso; lateribus incrassatis, intus longitudinaliter excavatis; elytris pallelis, minus nitidis, sat crebre punctatis, interspatiis aciculato-rugulosis; palporum maxillarium articulo ultimo quam penultimo angustiori, ovali.

Mas.—*Tarsorum* articulo basali modice dilatato, semiovato; duobus anticis fere æquilongis; tertio paullo longiori; *abdominis* segmento anali concavo-emarginato, bisinuato, lobo intermedio obtuse angulato; *telo* modice elongato, curvato, lateribus pallelis, apice oblique-convergentibus, apice ipso vix incurvato, sat valde producto, sublinguiformi.

Fœm.—*Abdominis* segmento anali apice bisinuato, lobo intermedio producto, angulato.

A. Viridi-metallica aut viridi-cyanea, thoracis basi elytrorumque lineâ suturali vittâque latâ vel plagâ subhumerali cæruleo-metallicis.

B. Tota cæruleo-metallica.

Long. 4—5 lin.

Hab.—European Alps.

Thorax half as broad again as long; sides parallel and slightly sinuate behind the middle, slightly dilated and rounded in front, the hinder angles very acute; disk rather strongly and irregularly, but not closely punctured; sides coarsely and more closely rugulose-punctate; lateral margin broad, thickened, impressed with a few coarse punctures, bounded within by a deep, entire, longitudinal coarsely-punctured groove. Elytra much broader than the thorax, parallel or nearly so in both sexes, less convex than in most of the other species, distinctly punctured, the interspaces aciculate, irregularly wrinkled.

This species is most nearly allied structurally to *Ch. speciosissima*; its larger size, narrower form, the parallel sides of the elytra in both sexes, together with the greater elongation of all its parts, more especially of the apical lobe of the *telum*, will separate it from that species.

Ch. tussilaginis, Suffr., is considered by Dr. Kraatz as a variety of this species. I have given the synonyms with doubt, as Suffrian says, "*hinten etwas erweitert*," but a specimen labelled *tussilaginis* from Mäerke's collection is equally parallel with the typical form.

Chrysomela elongata, Zeigl.

Suffr. Mon. p. 146.

speciosissima, var. Kraatz, Berl. Zeit. 1859, p. 286.

Elongata, postice in utroque sexu distincte ampliata, convexa, thorace fortiter irregulariter punctato, lateribus incrassatis, intus sulco longitudinali rude foveolato marginatis; elytris sat fortiter aciculato-punctatis, interspatiis leviter rugulosis; palporum maxillarium articulo ultimo quam penultimo angustiori, ovato, apice obtuso.

Mas.—*Tarsorum* articorum articulo basali modice dilatato, semiovato; illis *tarsorum* posteriorum longioribus, longitudine inter se fere æqualibus; *abdominis* segmento

anali late concavo-emarginato; *telo* modice elongato, valde curvato, apice vix recurvato, linguiformi.

Fœm.—*Abdominis* segmento anali leviter concavo-emarginato.

A. Viridi-aut cæruleo-metallica.

B. Viridi-cyanea, lineâ suturali vittâque discoidali cæruleis.

Long. $3\frac{1}{4}$ — $3\frac{3}{4}$ lin.

Hab.—Swiss Alps.

Thorax more than half as broad again as long; sides very slightly rounded, nearly parallel from the base to the middle, anterior angles acute, submucronate; upper surface coarsely punctured, sides thickened, bounded within by an entire, deeply excavated, coarsely and irregularly-punctured sulcation. Elytra broader than the thorax, ovate, dilated posteriorly, coarsely and closely punctured, the interspaces rugose.

Ch. elongata, placed by Kraatz under *speciosissima*, is a distinct and well-marked insect; its elongate form, narrow in front and dilated posteriorly in both sexes, will at first sight distinguish it from any allied species; the linguiform *telum* will separate it from the ♂ of *speciosissima*, and the concave apex of the anal segment of the abdomen from the ♀ of the same species.

Chrysomela speciosissima, Scop.

Ent. Carn. p. 231; Suffr. Mon. p. 142.

Oblongo-elongata, convexa; thorace lateribus rotundatis, basi parallelis, rarius a basi ad medium convergentibus, disco evidenter, ad latera foveolato-punctato; lateribus incrassatis, intus sulco lato, rude punctato marginatis; elytris fere parallelis ♂, postice paullo ampliatis ♀, sat crebre aciculato-punctatis; interspatiis leviter rugulosis; palporum maxillarium articulo ultimo ad penultimum vix aequilato, ovato.

Mas.—*Tarsorum* articulis basalibus a pede primo ad tertium longitudine perparum incrementibus; *abdominis* segmento anali leviter concavo-excavato, obsolete bisinuato; *telo* modice elongato, regulariter curvato, lateribus parallelis, apice oblique convergentibus, apice ipso paullo recurvato, modice producto, subcuneiformi.

Fœm.—*Abdominis* segmento anali obtuse truncato.

A. Viridi-metallica aut viridi-cyanea, thoracis basi elytrorumque lineâ suturali vittâque discoidali cyaneis.

B. Elytris olivaceo-æneis aut æneis, signaturis ut in A.

C. Tota viridi-metallica aut viridi-ænea.

D. Nigra, elytris cupreis.

E. Tota nigra.

F. Tota cuprea.

Long. $3\frac{1}{2}$ —4 lin.

Hab.—Switzerland, Spain, Italy, South of France.

Thorax nearly twice as broad as long; sides usually rounded, parallel at the extreme base, more rarely straight and converging from the base to beyond the middle; disk distinctly punctured; sides thickened, bounded within by a coarsely-punctured longitudinal excavation. Elytra broader than the thorax, oblong, parallel in the ♂, slightly dilated posteriorly in the ♀, convex, aciculate-punctate, interspaces finely rugulose.

Ch. speciosissima is very similar in all its parts to *Ch. cacaliae*. It is, however, smaller, much shorter and broader in proportion to its length; the elytra of the ♀ are also less parallel, being slightly dilated posteriorly.

Chrysomela elegans, Aragona.

De Quib. Coleopt. 1830, p. 27.

Ch. Genei, Suffr. Mon. p. 147.

Anguste oblongo-ovata ♂; magis ovata ♀, convexa; thorace distincte hic illic disperse punctato, lateribus incrassatis, intus sulco integro, rude varioloso-punctato marginatis; elytris fortiter aciculato-punctatis, punctis substriatim dispositis; interspatiis nitidis, ad apicem vix rugulosis, sparse irregulariter impresso-strigosis, sparse tenuiter punctatis; palporum maxillarium articulo ultimo ad penultimum fere æquilato, ovato, apice obtuso.

Mas.—*Tarsorum* articulo basali modice dilatato, semi-ovato, illis tarsorum posteriorum duorum paullo longioribus; *abdominis* segmento anali apice obtuse truncato; *telo* robusto, valde emvato, apice reflexo, lateribus parallelis, apice abrupte dilatato, hastato.

Fam.—*Abdominis* segmento anali apice late obtuso.

A. Viridi-metallica, fronte elytrorumque vittâ discoidali, antice ampliata, postice abbreviata, rufo-aureis.

B. Viridi-cyanea, aeneo tincta, supra aureo-aenea, elytrorum lineâ suturali vittâque discoidali cyaneis; limbo externo viridi-metallico.

Long. 3—3½ lin.

Hab.—Piedmontese Alps, Pyrenees, Lombardy.

Antennæ filiform, six outer joints rather more robust than the four preceding ones. Thorax one-half broader than long; sides rounded and converging in front, parallel behind the middle; disk distinctly and rather strongly, but (as a rule) less closely punctured than in *Ch. speciosissima*; lateral margin thickened, bounded within by a deeply impressed, coarsely punctured longitudinal groove. Elytra oblong and broadly rounded at the apex in the ♂, oblong-ovate in the ♀, convex, rather strongly punctured, the punctures obsoletely arranged in irregular longitudinal striæ; interspaces smooth and shining, sometimes faintly wrinkled towards the apex; in var. B. the whole surface is distinctly wrinkled.

Chrysomela guttata, Gebl.

Mem. Mosc. v. 1817, p. 316.

Ch. exanthematica, Weid. Germ. Mag. Ent. iv. 1821, p. 178.

„ *musiva*, Gebl. Ledeb. Reis. ii. 3, 1830, p. 215.

„ „ Motsch. Schrenck. Reis. ii. 1860, p. 210.

„ *speculifera*, Redt. Hugel. Kaschm. iv. 1848, p. 558.

„ *subaenea*, Motsch. Schrenck. Reis. ii. 1860, p. 229, t. 11, f. 13.

„ *consimilis*, Baly. Trans. Ent. Soc. 1874, p. 172.

Var. A. *Ch. musiva*, var. Gebl. Led. Reis. 1830.

„ *nigrogemmata*, Motsch. Schrenck. Reis. ii. 1860, p. 228.

Hab.—Eastern Siberia, Japan, Northern India.

This purely Asiatic and widely-spread species has been described by different authors under various names. It

varies somewhat in size and degree of punctuation, also slightly in coloration; the latter (usually cupreous) being occasionally tinged with metallic blue. Var. A. has the outer limb of the elytra broadly edged with rufous. Specimens from Japan are larger and more coarsely punctured than those from Continental Asia. The duck-billed shape of the ♂ organ and the form of the apex of the anal segment of the abdomen in the ♂ are constant in all the specimens I have examined.

Chrysomela marginata, Linn.

Syst. Nat. ed. x. p. 371.

Ch. songorica, Gebl. Bull. Ac. Petr. i. 1843, p. 39;
Bull. Mosc. 1859, iv. p. 25.

„ *sulcata*, Fisch. Cat. Col. Karal. 1843, p. 25;
Suffr. Mon. p. 82.

Mas.—Telum curvatum, subspathulatum, apice vix recurvato, mucronato; ducto filiformi, teli apice longiori.

Hab.—Europe, Eastern Siberia.

Ch. songorica, Gebl. (*sulcata*, Fisch.), from Eastern Siberia, cannot be considered as more than a local form of *Ch. marginata*; the specimens are usually rather larger, paler coloured and less metallic, and their elytra are often more strongly punctured and the striæ more deeply sulcate, but they vary greatly in all these respects; the form of the *telum* is similar in both.

Chrysomela Vishnu, Hope.

Gray, Zool. Misc. 1831, p. 30 (type in Brit. Mus.).

cingulata, Baly, Journ. Ent. i. 1860, p. 97.

Mas.—Telum linguiforme, vix curvatum.

Hab.—India, Nepal.

The present species closely resembles the preceding, and might, at first sight, be taken for a local variety; it differs, however, in the following particulars:—the apical joint of the maxillary palpus is less ovate and more broadly truncate, the basal half of the antennæ is more slender, the third joint being relatively longer than the fourth; the sides of the thorax are also more strongly punctured; the punctures on the elytra are placed at un-

equal distances, but arranged in a more regular line on each stria; and, lastly, the shape of the *telum* is entirely different.

Chrysomela flavomarginata, Say.

Journ. Acad. Philad. iii. p. 452; Suffr. Stet. Ent. Zeit. 1858, p. 387.

Mas.—Telum oblongum, curvatum, apice recurvato, in mucronem breviorum antrorsum producto.

Hab.—Louisiana, Colorado.

Closely allied to *Ch. marginata*. The elytra have the punctures more irregularly placed on the striae, the latter on the outer disk and at the apex being sometimes entirely lost. The *telum*, although formed on the same general plan, is shorter, its sides are more parallel, its apex more distinctly recurved, more obtusely angled, and the apical process is broader and shorter; the duct is stouter, more rigid, and is not produced beyond the apex of the telum. In all other respects this species agrees closely with *Ch. marginata*, of which species in all probability it was originally an offshoot.

Chrysomela Adamsi.

Oblongo-ovata, convexa, nigro-ant viridi-cyanea, nitida; thorace evidentem punctato, lateribus incrassatis, sulco longitudinali lato, fortiter, irregulariter punctato, intus marginatis; elytris rufis, sat fortiter subseriatim punctatis.

Long. $3\frac{1}{2}$ —4 lin.

Hab.—Oo Bay, Chinese Tartary (Adams); Eastern Siberia (Schrenck.)

Head remotely punctured, the puncturing rather closer on the clypeus; apical joint of palpus rather broader than the penultimate, its apex truncate. Thorax rather more than twice as broad as long; sides straight and parallel behind the middle, rounded and converging in front; disk moderately convex, distinctly punctured; lateral margin broad, thickened, bounded within by a broad (sometimes interrupted) longitudinal depression, the surface of which is coarsely and irregularly punctured. Elytra rather broader than the thorax, subparallel, their apices (conjointly) regularly rounded; above convex,

coarsely punctured, the puncturing on the inner side arranged in ill-defined irregular striæ.

Scarcely more than half the size of *C. grossa*, to which insect it is nearly allied. It may be known by the shape of the thorax, the sides of which in *grossa* are rounded and converging from base to apex; in the present species they are straight and parallel behind the middle.

Chrysomela rufo-marginata.

Ovata, convexa, subtus cum antennis nigra, cupreo vix tincta; supra cuprea; thorace nitido, minute, ad latera magis fortiter punctato, utrinque basi intra marginem lateralem longitudinaliter foveolato; elytris fortiter et regulariter punctato-striatis; aneo micantibus, limbo exteriori sordide rufo.

Long. $3\frac{1}{2}$ —4 lin.

Hab.—Mesopotamia.

Head very minutely but not closely punctured; clypeus transverse, depressed, more distinctly punctured than the upper face; antennæ rather slender, not half the body in length, black, the basal joints obscure rufo-piceous. Thorax rather more than twice as broad as long; sides rounded and converging from base to apex, the anterior angles subacute; above convex, very finely and rather distantly punctured, the puncturing rather closer and more distinct at the extreme base, a longitudinal space between the disk and outer margin coarsely punctured; lateral margin not thickened, separated from the disk at the base by a longitudinal fovea and again at the apex by a faint, ill-defined depression. Elytra rather broader than the thorax, convex, the highest part of the convexity being behind their middle; each elytron with eleven strongly-punctured striæ, the first abbreviated, the punctures on each stria placed at irregular intervals, the third and fourth, fifth and sixth and seventh and eighth rows absolutely approximating in pairs; interspaces plane, sparingly impressed with minute punctures; outer limb obscure rufous, the rufous colour entirely covering the outer interspace. About the same size and somewhat similar in form to *Ch. lamina*, elytra punctured as in that insect; it may be easily separated by the different shape of the thorax and by the difference in its lateral margination.

Genus AMBROSTOMA, Motsch.

Schrenck. Reis. in Amurlande, ii. p. 208.

Metasternum margine antico utrinque sulcato, apice immarginato; cæteris ut in *Chrysomelâ*.

The single character given above, as separating this genus from *Chrysomela*, is of more importance than would at first sight appear. In *Chrysomela* and its allies the apex of the metasternum is regularly margined for its whole extent. In *Doryphora*, *Calligrapha*, and all the other American forms (one or two small genera excepted), the anterior margin is bordered within, on either side, by a deep sulcation, the apex itself being immarginate; this form of margination is found in the present genus and also in *Eumela*, *Paralina*, and some Australian genera, showing their closer connection with what may be called the American type than with the European.

1. *Ambrostoma quadri-impressa*, Motsch. Bull. Mosc. 1845, i. p. 109; Schrenck. Reis. ii. 1860, p. 227, tab. 11, f. 11.

Hab.—Mongolia.

2. *Ambrostoma fortunei*, Baly, Journ. Ent. i. 1860, p. 94 (*Chrysomela*).

A. chinensis, Motsch. Schrenck. Reis. ii. 1860, p. 228.

Hab.—Northern China.

3. *Ambrostoma mahesa*, Hope, Gray, Zool. Misc. 1831, p. 30 (*Chrysomela*, type in Brit. Mus.).

A. nepalensis, Motsch. Schrenck. Reis. ii. 1860, p. 228.

Hab.—Nepal.

Genus CROSITA, Motsch.

Schrenck. Reisen. ii. p. 189.

Corpus ovatum, apterum aut alatum. *Thorax* lateribus incrassato-marginatis. *Elytra* coadnata aut libera. *Metasternum* apice elevato-marginatum. *Pedes, tarsorum* articulis subtus glabris, nitidis, utrinque serie unicâ c setulis rigidis marginatis; articulo secundo apice concavo, angulis acutis; tertio profunde concavo-emarginatâ, lobis acutis;

in ♂ tarsorum anticorum quatuor pulvinis integris; articulis secundo et tertio ut in *Chrysomelâ* formatis.

Three species belong to the above genus, which is purely Asiatic, and is well separated from *Chrysomela* by the peculiar structure of the tarsi.

A. Corpus apterum.

1. *Crosita altaica*, Gebl. Mem. Mosc. 1823, p. 117
(*Chrysomela*).

Ch. insignis, Fischer, Cat. Col. Karal. 1843, p. 20.

Hab.—Altai, Turcomania.

2. *Crosita Faldermanni*, Krynick. Bull. Mosc. 1832,
p. 170 (*Chrysomela*).

Ch. Maximovitschi, Zubkoff. Bull. Mosc. 1833,
p. 337.

Hab.—Turcomania.

B. Corpus alatum.

3. *Crosita cælestina*.

Elongata, subparallela, subtus nigro-cærulea, supra metallico-cærulea, nitida, thorace transverso, lateribus rotundatis; disco minus crebre punctato, intra marginem lateralem profunde longitudinaliter sulcato, margine ipso incrassato; clytris thorace latioribus, oblongo-ovatis, fortiter punctato-striatis, striis bifariam dispositis, interstitiis sat fortiter, subcrebre punctatis.

Mus.—*Abdominis* apice obtuse truncato; *telo* robusto, regulariter curvato, apice obtuse truncato; *tarsorum* anticorum articulis modice dilatatis, pulvillis integris.

Long. 4—4½ lin.

Hab.—Northern China, India, Persia.

Head remotely punctured; front impressed on either side, just above the clypeus, with a shallow coarsely-punctured fovea; clypeus depressed, more closely punctured than the upper face; apical joint of maxillary palpus not broader than the penultimate, subovate, its apex obtuse; antennæ filiform, less than half the length of the body. Thorax twice as broad as long; sides rounded, converging at base and apex, the anterior angles subacute; disk moderately convex, distinctly and somewhat closely punctured;

lateral margin thickened, broader in the middle, narrowed at base and apex, bounded within by a deep, well-defined, slightly-curved longitudinal groove. Elytra broader than the thorax, oblong-ovate, convex, the basal margin thickened; each elytron with ten rows of longitudinal striæ, the first abbreviated before the middle, the third and fourth, fifth and sixth and seventh and eighth, approximating in pairs; interspaces as strongly punctured as the striæ, in some specimens rendering the latter indistinct.

Doryphora approximata.

Late ovata, convexa, rufo-picea, nitida, thorace distincte punctato; elytris regulariter punctato-striatis, olivaceis, piceo limbatis, limbo submarginali fulvo.

Long. 5 lin.

Hab.—Parana.

Head very minutely punctured; antennæ more than half the length of the body, very slightly compressed and dilated towards the apex; the 4th to the 10th joints nigro-piceous, the basal joint stained above with the same colour. Thorax rather more than twice as broad as long; sides sinuate at the base, dilated and rounded before the middle, the anterior angles mucronate; disk finely and distinctly but not very closely punctured. Scutellum shining, impunctate. Elytra rather broader than the thorax, broadly rounded at the apex; each elytron with eleven rows of distinctly impressed punctures, the first short, the tenth deeply sulcate, the eleventh, on the extreme outer margin, less strongly marked than the rest; interspaces near the suture on the outer margin and towards the apex obsoletely convex; the whole limb on each elytron rufo-piceous, bounded within by a narrow flavous line, which is less defined along the suture than elsewhere. Mesosternal spine nearly equal in length to the metasternum.

Somewhat similar to *D. bilimbata*, but at once separated by its much broader form, more strongly punctured elytra, and the piceous coloration of its body and thorax.

Doryphora Godmani.

Rotundato-ovata, sat valde convexa, cuprea, nitida; thorace remote, tenuiter punctato; elytris tenuiter sed distincte punctato-striatis; vittâ interruptâ sublaterali

fasciisque interruptis tribus, unâ subbasali, secundâ prope medium tertiâque ante apicem castaneis.

Long. $4\frac{1}{2}$ — $4\frac{3}{4}$ lin.

Hab.—Trinidad.

Head very finely and distantly punctured; clypeus transverse, well defined, faintly depressed, rather more strongly so on either side, more strongly and closely punctured than the front; antennæ about half the length of the body, very slightly thickened towards the apex, the basal joint beneath, together with the second at its extreme apex, piceous; mandibles robust, rather larger in the ♂, abruptly angled in the middle in both sexes, coarsely punctured. Thorax more than twice as broad as long; sides straight and parallel from the base to far beyond the middle in the ♂, then rounded and converging to the apex, the anterior angle acute, the hinder one slightly produced, very acute; in the ♀ the sides are less straight and parallel in front, being rounded from just before their middle; apical border deeply excavated; disk transversely convex, faintly excavated on either side, finely and remotely punctured. Elytra broader than the thorax, quadrate-ovate, broadly rounded at the apex, above convex; each elytron with eleven rows of fine but distinct punctures, the first short, those on the outer disk rather confused; interspaces plane, impunctate; each elytron with a submarginal irregularly interrupted castaneous vitta and three (also interrupted) concolorous fasciæ, one just below the basal margin, one across the middle, and a third some little distance before the apex; these fasciæ, which externally join the submarginal vitta, are formed of irregular spots and probably in some specimens are nearly obsolete. Sternal spine acute, equal in length to the metasternum.

Nearly allied in form to *D. astuans*, rather larger than that species, the sides of the thorax more parallel.

Doryphora fulvopustulata.

Ovata, ad apicem attenuata, convexa, picea, nitida, capite thoraceque subnitidis, aeneo tinctis, antennarum articulis ultimis duobus albido-flavis; thorace sat fortiter granuloso, suberebre punctato; elytris subseriatim punctatis, granulosis, utrisque pustulis levibus sex, duobus

infra basin, duobus prope medium duobusque ante apicem, fulvis ornatis.

Long. 5 lin.

Hab.—Columbia, Medellin.

Head granulose, distinctly punctured; labrum rufopiceous. Thorax more than twice as broad as long; sides straight, converging from the base towards the apex, abruptly rounded at the latter, the anterior angles strongly mucronate, the hinder ones acute; disk faintly excavated on either side, granulose, subopaque, impressed with round shining punctures, rather larger and more crowded at the sides than on the middle disk. Elytra broader than the thorax; sides subparallel from the shoulder to below the middle, thence obliquely converging and conjointly forming at the apex a distinct angle; above convex, gibbous just before the middle, thence obliquely deflexed to the apex; surface subopaque, rather strongly punctured, the punctures arranged in irregular longitudinal striæ, interspaces granulose; each elytron with six slightly-raised, shining, impunctate fulvous spots, two at the base, the first on the humeral callus, extending upwards to the basal margin, the second rather lower, placed near the suture; two placed obliquely about the middle, one on the outer, the other on the inner disk; and lastly, two others, also obliquely placed halfway between the middle and the apex; these spots standing exactly under each other, form two longitudinal rows on each elytron.

Very nearly allied in form and coloration to *D. brunneipennis*, Jacoby, but scarcely more than half the size, more strongly punctured, and easily to be separated by the fulvous spots in the elytra, which, being slightly thickened, shining and impunctate, stand up in strong contrast to the opacity of the general surface. In one of my specimens of *D. brunneipennis* I find very faint indications of spots arranged in a similar manner, but they are not thickened, and are subopaque and sculptured in a similar manner to the rest of the disk.

DESCRIPTION OF PLATE II.

- Fig. 1. *Ch. speciosa*: *a*, telum; *b*, apex of ditto; *c*, palpus; *d*, apex of anal segment of abdomen, ♂ and ♀.
- „ 2. „ *gloriosa*: *a*, telum; *b*, apex of ditto; *c*, palpus; *d*, anal segment of abdomen, ♂ and ♀.
- „ 3. „ *bifrons*: *a*, telum; *b*, apex of ditto; *c*, apex of anal segment of abdomen, ♂ and ♀.
- „ 4. „ *nivalis*: *a*, telum; *b*, apex of ditto; *c*, palpus; *d*, anal segment of abdomen, ♂ and ♀; *e*, anterior tarsus, ♂.
- „ 5. „ *intricata*: *a*, telum; *b*, apex of ditto; *c*, palpus; *d*, anal segment of abdomen, ♂ and ♀.
- „ 6. „ *aleyonea*: *a*, telum; *b*, apex of ditto; *c*, palpus; *d*, apex of anal segment of abdomen, ♂.
- „ 7. „ *tristis*: *a*, telum; *b*, apex of ditto; *c*, apex of anal segment, ♂ and ♀.
- „ 8. „ *cacaliæ*: *a*, telum; *b*, apex of ditto; *c*, anal segment of abdomen, ♂ and ♀.
- „ 9. „ *speciosissima*: *a*, telum; *b*, apex of ditto; *c*, palpus; *d*, anal segment of abdomen, ♂ and ♀.
- „ 10. „ *elegans*: *a*, telum; *b*, apex of ditto; *c*, palpus; *d*, apex of anal segment of abdomen, ♂ and ♀.
- „ 11. „ *sulcata*: *a*, telum; *b*, apex of ditto; *c*, palpus; *d*, apex of anal segment of abdomen, ♂ and ♀.
- „ 12. „ *vinctipennis*: *a*, telum; *b*, apex of ditto.
- „ 13. „ *marginata*: *a*, telum; *b*, apex of ditto.
- „ 14. „ *vishnu*: *a*, telum; *b*, apex of ditto.
- „ 15. Underside of tarsus of *Crosita*.
- „ 16. Apex of metasternum of *Ambrostoma*.
- „ 17. Apex of telum of *Ch. elongata*.